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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,712	03/10/2004	Karsten Heuser	12406-083001 / P2003,0150	5002
26181 7590 01/05/2010 FISH & RICHARDSON P.C. PO BOX 1022 MINNEAPOLIS, MN 55440-1022			EXAMINER VETERE, ROBERT A	
			ART UNIT 1792	PAPER NUMBER
			NOTIFICATION DATE 01/05/2010	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/798,712	<b>Applicant(s)</b> HEUSER ET AL.	
	<b>Examiner</b> ROBERT VETERE	<b>Art Unit</b> 1792	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 4,5,8,9 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-7,10-15,17-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

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## DETAILED ACTION

### *Examiner's Comments*

An amendment, presenting arguments, was received and entered on 9/25/09. Claims 4-5, 8-9 and 16 remain withdrawn pursuant to an election made on 5/27/2008.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 6, 7, 10-15, and 17-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Graff et al. (US 2003/0203210).

**Claim 1:** Graff teaches barrier coatings and methods of making the same. Specifically, Graff teaches depositing three plies of aluminum oxide onto the substrate, followed by a plasma treatment (i.e. forming a first ceramic barrier layer on a substrate, wherein the first ceramic barrier layer has a first surface and a second surface and the first surface is closer to the substrate than the second surface; forming a second ceramic barrier layer directly on the second surface of the first ceramic barrier layer) [0088]. A portion of the second surface of the first ceramic barrier layer is modified to introduce first nucleation sites on the second surface via plasma treatment [0065, 0073]. Graff further discloses that the composite structure of the plies of the layers may compensate for unavoidable defects because defects in one ply will generally be blocked by the subsequent overlying ply (inherently, the first ceramic barrier layer and the second ceramic barrier layer together have enhanced barrier capabilities against gas and liquid as compared to similar adjacent ceramic barrier layers formed without the modifying step to introduce nucleation sites ([0079]; [0088]-[0092]; see fig. 3).

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**Claims 2-3:** Graff teaches chemical modification by the use of a plasma treatment ([0065], [0073], and [0088]).

**Claims 6-7 and 10-11:** Graff teaches multi-ply barrier layers that may comprise metal nitrides and metal oxides such as titanium oxide and tantalum oxide, (i.e. applying material with a critical nucleus of one molecule) [0043]. Furthermore, as multiple plies are deposited, the very first trace of the metal oxide or nitride hitting the surface of the ceramic barrier layer would inherently form a nucleation promoting material on at least a portion of a previously deposited ceramic layer.

**Claims 12-15 and 17:** Graff teaches forming first and second ceramic barrier layers comprising aluminum oxide and silicon nitride, and may be deposited by chemical vapor deposition ([0043], [0071]).

**Claim 18:** Graff discloses the use of a flexible transparent substrate [0040].

**Claim 19:** Graff teaches modifying at least a portion of the second surface to introduce second nucleation sites on the second surface of the second ceramic barrier layer; and forming a third ceramic barrier layer on the second ceramic barrier layer, wherein the third ceramic barrier layer is inherently initiated at the second nucleation sites ([0023]—[0024]).

**Claims 20-23:** Graff teaches the barrier layers (i.e. first and second ceramic barrier layers) may have a thickness ranging from 50-500 angstrom (i.e. 5-50 nm and within the claimed range) [0021].

**Claims 24-25:** Graff teaches forming an environmentally sensitive display device 50 (i.e. OLED) on top isolation layer/ceramic barrier layer 42 by: forming a first electrically conductive layer on the isolation barrier layer 42; forming a functional organic layer 50 on the first electrically conductive layer 52; and forming a second electrically conductive layer 54 on the functional organic layer (see fig. 1b, [0063]). Graff does not explicitly teach forming the organic electrical device on the second ceramic barrier layer; however, it would have been within the level of ordinary skill in the art at the time of the invention to vary the number of barrier layers on the substrate in order to effectively guard against atmospheric contaminants without hindering the overall size of the device.

**Claim 26:** Graff teaches forming an encapsulation 56 over the second electrically conductive layer such that the functional organic layer is sealed from the environment by said encapsulation (see fig. 1b; [0063]).

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***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graff in light of Graff et al. (US 6,522,067).

**Claim 27:** Graff '210 teaches forming multiple ceramic layers/plies (i.e. third and fourth ceramic barrier layers) wherein at least one layer is plasma treated (i.e. modifying a second surface of a third ceramic barrier layer to introduce second nucleation sites on the surface of the third ceramic barrier layer). Graff '210, however, does not explicitly disclose an encapsulation comprising ceramic barrier layers.

Graff '067 teaches an encapsulated organic light emitting device whereby the barrier stacks 270 and 130 encapsulate the electrically conductive layer/functional organic layer and is comprised of several ceramic barrier layers in order to provide enhanced barrier protection (see fig. 2, col. 3, lines 32-48; col. 4, lines 8-30; col. 5, lines 29-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include Graff '067's ceramic barrier containing encapsulation in Graff '210's method in order to provide enhanced barrier protection.

***Response to Arguments***

5. Applicant's arguments filed 9/25/2009 have been fully considered but they are not persuasive.

Applicant argues that Graff fails to teach that the surface is treated to provide nucleation sites. This is not persuasive. Graff teaches, at, e.g., ¶ 0065, that the plasma treatment can be used to provide reactive groups on the surface for more significant modification of the surface (claimed nucleation sites).

6. Applicant's arguments with respect to the Huang reference have been fully considered and are persuasive. The rejection of claim 1 under Huang has been withdrawn.

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***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT VETERE whose telephone number is (571)270-1864. The examiner can normally be reached on Mon-Fri 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Vetere/  
Examiner, Art Unit 1792

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/Michael Cleveland/

Supervisory Patent Examiner, Art Unit 1792